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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/907,904	07/19/2001	Robert Y. Seward	10010879-1	9947

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

BOOKER, KELVIN E

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/907,904

Applicant(s)

SEWARD, ROBERT Y.

Examiner

Kelvin E Booker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Detailed Office Action*.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 101*

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. **Claims 1-14** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The aforementioned claims are directed at a method for selecting solutions without disclosing any *computer implemented processing*. Abstract ideas (see Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759) or the mere manipulation of abstract ideas (see Schrader, 22 F.3d at 292-93, 30 USPQ2d at 1457-58) are not patentable.

As disclosed, independent **claims one and eight** focus on nonfunctional descriptive material, which is inclusive of the mere arrangement of data without engaging functionality when employed as a computer component. Claiming nonfunctional descriptive material merely recorded on a computer-readable medium is deemed non-statutory because it fails to present functionality to facilitate practical application requirements (see MPEP 2106(IV)(B)(1)).

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-20** are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al., “Genetic Algorithms for Combinatorial Optimization: The Assembly Line Balancing Problem” [hereafter Anderson].

**As per claim 1**, Anderson teaches of a method of selecting a solution comprising:

A. creating first and second separate populations of parent solutions (see page 2, paragraphs 3 and 4, especially paragraph 4, section: “two new individuals...when mated”);

B. combining at least one of the parent solutions from the first population with at least one of the parent solutions from the second population to create offspring solutions (see page 2, paragraphs 3 and 4, especially paragraph 4, section: “thus parents...when mated”);

C. associating the offspring solutions with the first population (see page 2, paragraphs 3 and 4, especially paragraph 4, section: “thus parents...called crossover”); and

D. selecting second-generation solutions for the first population from the offspring solutions and the parent solutions (see page 2, paragraphs 3 and 4, especially paragraph 4, section: “this process...between individuals”).

**As per claim 2**, Anderson teaches of a method further comprising keeping the second-generation solutions and discarding all remaining solutions in the first population (see page 15, paragraph 1: “first we can carry...progressing better”).

**As per claim 3**, Anderson teaches of a method further comprising associating *scores* (e.g., fitness values) with each of the parent solutions and offspring solutions, and wherein the step of selecting comprises selecting the second-generation solutions based on the *scores* (e.g., fitness values) (see page 6, paragraph 2: “at the heart...selected for mating”).

**As per claim 4**, Anderson teaches of a method further comprising combining at least one of the second-generation solutions from the first population with at least one second-generation solution from the second population (see page 2, paragraphs 3 and 4, especially paragraph 4, section: “this process...between individuals”).

**As per claim 5**, Anderson teaches of a method further comprising mutating at least one of the second-generation solutions (see page 15, paragraph 1: “first we can carry ...progressing better”).

**As per claim 6**, Anderson teaches of a method further comprising keeping the first population separate from the second population (see page 2, paragraphs 3 and 4, especially paragraph 4, section: “the process of crossover...close to the global optimum”);

**As per claim 7**, Anderson teaches of a method wherein the step of combining comprises combining each of the parent solutions in the first population with at least one of the parent solutions in the second population (see page 2, paragraphs 3 and 4, especially paragraph 4, section: “this process...between individuals”).

**As per claims 8-14**, the same limitations are subjected to in claims 1-7, respectively, therefore the same rejections apply (see claims 1-7 above).

**As per claim 15-20**, the same limitations are subjected to in claims 1-7, respectively, therefore the same rejections apply (see claims 1-7 above).

### ***Conclusion***

5. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- A. Afeyan et al., U.S. Patent Application Publication No. 2003/0088458;
- B. Pelikan et al., U.S. Patent Application Publication No. 2003/0055614;
- C. McHaney, U.S. Patent Application Publication No. 2002/0095393;
- D. Nakisa, U.S. Patent Application Publication No. 2002/0062296;
- E. Lyon, U.S. Patent No. 5,581,657;
- F. Nakisa, U.S. Patent No. 6,480,823;
- G. Koza, U.S. Patent No. 5,343,554;
- H. Davis, U.S. Patent No. 4,961,152;
- I. Anderson et al., "Genetic Algorithms for Combinatorial Optimization: The Assembly Line Balancing Problem";
- J. Shapcott, "Index Tracking: Genetic Algorithms for Investment Portfolio Selection";
- K. Allenson, "Genetic Algorithms with Gender for Multi-Function Optimisation";
- L. Muhlenbein, "Genetic Algorithms";
- M. Hoffmeister et al., "Genetic Self-Learning";
- N. Yang, R., "Line-Breeding Schemes for Combinatorial Optimization";
- O. Koza, "Genetically Breeding Populations of Computer Programs to Solve Problems in Artificial Intelligence";
- P. Venkateswaran, "Cooperative Genetic Algorithm for Optimization Problems in Distributed Computer Systems".

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6. An inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Booker whose telephone number is (703) 308-4088. The examiner can normally be reached on Monday-Friday from 7:00 AM-5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri, can be reached on (703) 305-0282. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

An inquiry of a general nature or relating to the status of this application proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

**K.E.B.**

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**December 22, 2003**



**ANIL KHATRI**  
**SUPERVISORY PATENT EXAMINER**